

REMARKS

This Amendment is in response to the Office Action dated July 27, 2005, in which claims 1-19 were initially rejected. Applicants respectfully request reconsideration and allowance of all pending claims in view of the above-amendments and the following remarks.

I. CLAIM REJECTIONS

Claims 1, 7, 11-12 and 17 were rejected under §102(e) as being anticipated by Sasagawa et al., U.S. Patent No. 6,784,574.

Claims 1-19 were rejected under §102(b) as being anticipated by Scepanovic et al., U.S. Patent No. 6,292,929.

Claims 1, 7, 11-12 and 17 were rejected under §102(b) as being anticipated by Scepanovic et al., U.S. Patent No. 6,134,702.

Claims 1 and 12 were rejected under §102(b) as being anticipated by Gasanov et al., U.S. Patent No. 6,637,016.

II. CLAIM AMENDMENTS

Independent claims 1, 11 and 12 are amended to include some of the elements of dependent claims 8-9 and 18-19, respectively. In addition, some of these elements have been clarified.

Original steps b) and c) have been canceled from claim 1 and added as steps d) and e) in claim 8. Dependent claims 2 and 4-7 are amended to depend from claim 8 in order to provide antecedent basis for the elements appearing in those claims.

In addition, the dependent claims are amended to be consistent with the amendments made to the independent claims.

The Office Action reflects that claims 8-10 and 18-19 are novel over Sasagawa et al. patent, the Scepanovic et al. '702 patent and the Gasanov et al. '016 patent. Since the present amendments add similar features to independent claims 1, 11 and

12, Applicants respectfully request that the claim rejections based on these reference be withdrawn.

III. SCEPANOVIC ET AL. '929

With respect to the Scepanovic et al. '929 patent, the Office Action suggests that the elements of claims 8-10 and 18-19 are anticipated by FIG. 5. FIG. 5 of the '929 patent is a flowchart illustrating the formation of a cell cluster or "neighborhood". As described in column 20, line 44 to column 21, line 10, "a target number M" of cells are designated to be included in a neighborhood. Then, a particular cell v is specified to constitute the center of the cluster. The algorithm determines which nets include the center cell, v_c , and assigns all these nets to corresponding borders. Step 108 includes, "assigning all cells which are not in the neighborhood from the nets in the current border to the neighborhood."

The clusterization proposed in Scepanovic et al. '929 is based on the cells' neighborhood only. The goal of clusterization is to put in one cluster those cells that are neighbors (or neighbors of neighbors, etc.). If some cell is the neighbor of the center cell of some cluster, it is guaranteed that this cell will be placed in this cluster.

In contrast, the algorithm disclosed in the present application is based in part on the timing characteristics of the design. The algorithm not only considers a cell's neighborhood, but also the values of timing path delays when cells are assigned to clusters. If a particular cell is a neighbor of the center cell of some cluster, it is not guaranteed that this cell will be placed in this cluster.

With respect to independent claim 1, this claim is amended to include steps from dependent claims 8 and 9. In particular, claim 1 includes steps of creating a cluster for each flip-flop cell, and creating a cluster for each logic cell for which there is no path that comprises the logic cell and begins or

ends at a flip-flop cell. Claim 1 also includes the step of, for each logic cell for which there is at least one path, including a longest path, that comprises the logic cell and begins or ends at a flip-flop cell, assigning the logic cell to the cluster of the flip-flop cell at which the longest path either begins or ends.

The Scepanovic et al. '929 patent does not disclose the process of creating clusters recited in independent claim 1.

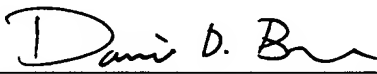
Independent claims 11 and 12 are amended to include similar limitations.

Since, Scepanovic et al '929 does not anticipate amended claims 1, 11 and 12, Applicants respectfully request that the rejection of these claims and their respective dependent claims under §102(b) be withdrawn.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By: 

David D. Brush, Reg. No. 34,557
Suite 1400 - International Centre
900 Second Avenue South
Minneapolis, Minnesota 55402-3319
Phone: (612) 334-3222 Fax: (612) 334-3312

DDB:tkj